

What is claimed is:

1. A multi-casting relay method under a digital subscriber line (xDSL) environment, the method comprising the steps of:

5       prompting a contents providing server to induce a first xDSL connector terminal to an xDSL server (B-RAS) to which the first xDSL connector terminal belongs when the first digital subscriber line (xDSL) connector gets an access to the contents providing server to select a desired contents (step 1);

      prompting the contents providing server to broadcast multicasting data to the xDSL server in real time (step 2);

10       discriminating whether xDSL service device belonging to the xDSL server can support a multicasting broadcast (step 3);

      prompting the xDSL server to broadcast the multicasting data to the first xDSL connector terminal in real time and receive the broadcasting data from the first xDSL connector terminal at a multicasting address if the xDSL  
15   service providing equipment supports the multicasting broadcast as a result of the discrimination at the prior step (step 4);

      prompting the contents providing server to induce a second xDSL connector terminal to a xDSL server (B-RAS) to which the second xDSL connector terminal belongs, when the second xDSL connector gets an access,  
20   after completion of the prior step, and to relay the multicasting data from a xDSL service device belonging to a relevant xDSL server to the second xDSL connector terminal (step 5).

2. The method as defined in claim 1 further comprising a step (step 6) of prompting the terminal of the first xDSL connector receive multicasting

broadcasting data one-on-one in real time from the xDSL server when the xDSL service device does not support the multicasting as a result of the discrimination at step 3.

3. The method as defined in claim 1 further comprising a step (step 7) of  
5 prompting the contents provider to induce the terminal of the second xDSL user to an xDSL server (B-RAS) to which the terminal of the second xDSL connector belongs after completion of step 4, when the second xDSL gets in connection, and prompting the terminal of the second xDSL connector to receive the multicasting broadcasting data from the xDSL server one-on-one in real time  
10 when there is no on-air multi-broadcasting packet in the xDSL service device of the relevant xDSL server.

4. The method as defined in claim 1, wherein the first xDSL connector is an initial ADSL connector that is connected with a web server and the second xDSL connector is the second or other subsequent ADSL connector.

15 5. The method as defined in claim 4, wherein step 1 further comprises the steps of:

selecting desired contents in a relevant web server when the first ADSL connector designates (uploads) an internet address (URL) and is connected with the web server (step 8);

20 prompting a relaying function performing program (Troute.cab file) to download at the terminal of the first ADSL client (step 9); and

prompting the first ADSL connector to communicate with an internet broadcasting program (CAST 365 program) of a multicasting broadcasting transmitting media server through the relaying function performing program  
25 and prompting the internet broadcasting program to induce the first ADSL

connector terminal to the multicast box (server) of the ADSL server (B-RAS) to which the first ADSL client connector terminal belongs (step 10).

6. The method as defined in claim 5, wherein the first ADSL connector terminal discriminates whether an ADSL service device of the first ADSL connector terminal can support the multicasting through the relaying function performing program when a multicast box of an ADSL server (B-RAS) sends to the relaying function performing program of the first ADSL connector terminal a command of discriminating whether the relevant DSLAM supports multicasting; receives multicasting broadcasting data from the ADSL server through the relaying function performing program and transmits the broadcasting data to a multicasting address of the ADSL service device when the ADSL service device can support the multicasting; and receives the multicasting broadcasting data from the ADSL server by getting in one-on-one connection with the multicast box through the relaying function performing program if the ADSL service device does not support multicasting.

7. A multicasting relay method under a digital subscriber line (xDSL) environment, the method comprising the steps of:

prompting a contents providing server to track a first xDSL connector internet address and discriminate the existence of a multicast box (server) moving along with a xDSL server (B-RAS) to which the first xDSL connector belongs when a digital subscriber line (xDSL) connector is connected with the contents providing server to select a desired contents (step 1);

prompting the contents providing server to transmit multicasting data to a relevant multicast box (server) in real time (step 2);

prompting the multicast box (server) to make a multicasting data

transmission command to the first xDSL connector terminal (step 3);

prompting the first xDSL connector terminal to make a multicasting attempt to a xDSL service device of the xDSL server according to the multicasting data transmission command (step 4);

- 5       prompting the multicast box (server) to broadcast multicasting data through the xDSL service device to the first xDSL connector terminal in real time when the xDSL service device supports multicasting data as a result of success at step 4 (step 5); and

- 10       prompting the contents providing server to induce the second xDSL connector terminal to a multicast box (server) moving along with an xDSL server (B-RAS) to which the second xDSL connector terminal belongs, when the second xDSL connector gets an access after completion of step 5 and to relay multicasting data to the second xDSL connector terminal through xDSL service device of a relevant xDSL server (step 6).

- 15       8. The method as defined in claim 7 further comprising a step of prompting the first xDSL connector terminal to receive multicasting broadcasting data from the multicast box (server) one-on-one in real time as a result of failure in the attempt at step 4, when the xDSL service device does not support multicasting (step 7).

- 20       9. The method as defined in claim 8 further comprising the steps of:

prompting the contents providing server to send a multicasting data transmission command to the first xDSL connector terminal if there is no multicast box (server) in a xDSL server to which the first xDSL connector belongs as a result of the discrimination at step 1 (step 8);

prompting the first xDSL connector terminal to attempt multicasting into a command region according to the multicasting data transmission command (step 9);

prompting the first xDSL connector terminal to receive multicasting  
5 broadcasting data in real time if it is possible to send multicasting into the command region as a result of the successful attempt at step 9 (step 10); and

prompting the first xDSL connector terminal to receive multicasting broadcasting data from the contents server one to one in real time when it is impossible to send the multicasting into the command region as a result of  
10 failure at step 9 (step 11).

10. The method as defined in claim 7, wherein step 6 further comprises the steps of:

prompting the contents providing server to track an internet address of the second xDSL connector and check a multicast box (server) moving along  
15 with the xDSL server (B-RAS) to which the second xDSL connector belongs when the second xDSL connector gets in connection (step 12);

getting to step 8 if there is no relevant multicast box (server) as a result of discrimination at step 12 (step 13);

discriminating the possibility of broadcasting data transmission due to  
20 a prior connector being available at the relevant multicast box (server) when there is available relevant multicast box (server) as a result of discrimination at step 12 (step 14);

transmitting IP information and subscriber program of the relevant multicast box (server) to the second xDSL connector terminal from the

multicast box (server) to which the second xDSL connector belongs if there is an available prior connector in the relevant multicast box (server) to make it possible to transmit broadcasting data as a result of discrimination at step 14 (step 15);

- 5 discriminating whether the second xDSL connector terminal can receive multicasting packet data by IP multicasting at the xDSL service device to which the second xDSL connector belongs through the subscriber program (step 16);

- prompting the second xDSL connector terminal to receive multicasting broadcasting data by IP multicasting at the xDSL service device to which the  
10 second xDSL connector terminal itself belongs if it is possible to receive multicasting packet data by IP multicasting at the relevant xDSL service device as a result of discrimination at step 16 (step 17);

- prompting the second xDSL connector terminal to receive multicasting broadcasting data from the multicast box (server) one-on-one if it is impossible  
15 to receive multicasting packet data by IP multicasting at the xDSL service device as a result of discrimination at step 16 (step 18); and

advancing to step 2 if there is no prior connector available at the relevant multicast box (server) to make it impossible to transmit broadcasting data as a result of discrimination at step 14 (step 19).

- 20 11. The method as defined in claim 10, wherein the multicasting data transmission command is a command for transmitting the multicasting information to an imaginary IP (D-Class) region to enable the connectors in one router region to receive multicasting broadcasting information, wherein all connectors are allowed to receive the broadcasting information at the xDSL  
25 service device when a connector who regards the xDSL service device as one

router region to receive a signal transmits a broadcasting information (frequency signal) to D-Class region to prompt the xDSL service device to assist the multicasting.

12. The method as defined in claim 11, wherein the first xDSL connector is an initial Asymmetric Digital Subscriber Line (ADSL) connector who gets in connection with a web server, and the second xDSL connector is a second or an ADSL connector subsequent therefrom.

13. A multicasting relaying method under a modem environment, the method comprising the steps of:

10           prompting a contents providing server to induce a modem connector terminal to a server (NAS) to which the modem connector terminal belongs when a modem connector is accessed (step 1);

              prompting the contents providing server to broadcast multicasting broadcasting data to the server (step 2); and

15           prompting the server to broadcast multicasting broadcasting data to the modem connector terminal one-on-one in real time (step 3).

14. A recording medium readable by a computer recorded with programs for realizing a set of functions for:

20           prompting a contents providing server to induce a first xDSL connector terminal to a xDSL server (B-RAS) to which the first xDSL connector terminal belongs if a first digital subscriber line (xDSL) connector gets an access to the contents providing server to select a desired contents (first function);

              prompting the contents providing server to broadcast a multicasting data to the xDSL server in real time (second function);

discriminating whether xDSL service device belonging to the xDSL server supports the multicasting data (third function);

prompting the xDSL service device to broadcast the multicasting data to the first xDSL connector terminal in real time and the xDSL service device to  
5 receive the broadcasting data from the first xDSL connector terminal at a multicasting address if the xDSL service device supports the multicasting data according to the discrimination result of the third function (fourth function); and

prompting the contents providing server to induce the second xDSL connector terminal to a xDSL server (B-RAS) to which the second xDSL  
10 connector terminal belongs, when the second xDSL connector gets an access, after completion of the fourth function, and relay the multicasting data from xDSL service device belonging to a relevant xDSL server to the second xDSL connector terminal (fifth function).

15 15. The medium as defined in claim 14 further comprising a function of prompting the first xDSL connector terminal to receive the multicasting broadcasting data from the xDSL server on one-on-one in real time if the xDSL service device is unable to support the multicasting as a result of discrimination of the third function (sixth function).

20 16. The medium as defined in claim 14 further comprising a function of prompting the contents providing server to induce the second xDSL connector terminal to xDSL server (B-RAS) to which the second xDSL connector terminal belongs, when the second xDSL connector gets an access, after completion of the fifth function, and the second xDSL connector terminal to receive multicasting broadcasting data from the xDSL server one-on-one in real time if  
25 there is no on-air multicasting packet at the xDSL service device of the relevant xDSL server (sixth function).



17. A recording medium readable by a computer recorded with programs for realizing a set of functions for:

prompting a contents providing server to track an internet address of the first xDSL connector and confirm the existence of a multicast box (server)  
5 subsequently moving along with xDSL server (B-RAS) to which the first xDSL connector belongs when a digital subscriber line connector gets an access to a contents providing server to select desired contents (first function);

prompting the contents providing server to transmit a multicasting data to a relevant multicast box (server) in real time (second function);

10 prompting the multicast box (server) to make a multicasting data transmission command to the first xDSL connector terminal (third function);

prompting the first xDSL connector terminal to make a multicasting attempt to xDSL service device belonging to the xDSL server according to the multicasting data transmission command (fourth function);

15 prompting the multicast box (server) to broadcast the multicasting data through the xDSL service device to the first xDSL connector terminal in real time when the xDSL service device supports multicasting data as a result of the successful attempt of function 4 (fifth function); and

prompting the contents providing server to induce the second xDSL  
20 connector terminal to the multicast box (server moving along with a xDSL server (B-RAS) to which the second xDSL connector terminal belongs when the second xDSL connector gets an access after completion of the fifth function, and the multicast box (server) to relay the multicasting data through xDSL service device of a relevant xDSL server to the second xDSL connector terminal (sixth  
25 function).

18. The medium as defined in claim 17 further comprising a function (function 7) of prompting the first xDSL connector terminal to receive multicasting broadcasting data from the multicast box (server) one-on-one in real time if the xDSL service device does not support the multicasting as a result of failure in attempt at the fourth function.

19. The medium as defined in claim 18 further comprising the functions of:

prompting the contents server to send a multicasting data transmission command to the first xDSL connector terminal if there is no multicast box (server) at an xDSL server to which the first xDSL belongs as a confirmation result of function 1 (function 8);

prompting the first xDSL connector terminal to attempt multicasting into a command region according to the multicasting data transmission command (function 9);

prompting the first xDSL connector terminal to receive multicasting broadcasting data by multicasting in real time if multicasting is possible in the command region as a successful attempt result of the ninth function (function 10); and

prompting the first xDSL connector terminal to receive multicasting broadcasting data from the contents server one-on-one in real time if multicasting is impossible in the command region as a result of failure in the attempt at function 9 (function 11).

20. A recording medium readable by a computer recorded with programs for realizing a set of functions for:

prompting a contents providing server to induce the modem connector

terminal to a server (NAS) to which the modem connector terminal belongs (first function);

prompting the contents providing server to broadcast a multicasting data to the server (NAS) in real time (second function); and

- 5       prompting the server (NAS) to broadcast the multicasting data to the modem connector terminal one-on-one in real time (third function).